

HOT SAND INFLATION FOR SMALL INSECTS AND SPIDERS

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Spiders, aphids and immature Hemiptera often shrivel badly when mounted dry and so are usually preserved in liquid. The hot sand method inflates them, drying the integument and tissues so that shrinkage is reduced to a minimum. The colors are scarcely affected although the usual fading in time will occur. The technique is essentially that described by Nathan Banks in *Directions for Collecting and Preserving Insects* (Smithsonian Institution Bulletin 67:70, 1909). The method was then described as somewhat useful for micro-Lepidoptera larvae, too small to eviscerate.

The specimen should be placed on hot sand. The most satisfactory temperature is 140°C. A metal disc thermometer is less apt to break than a glass mercury one. Experimentation showed that temperatures above 140°C will singe or burn the specimen while those below will not inflate the body quickly enough. Inflation is most easily accomplished with the specimen placed on the dorsum since the legs, which are more susceptible to burning, prevent direct contact with the hot sand when placed on the venter. The specimens will inflate visibly. When the movement has stopped they should be left there from a few seconds to two minutes depending upon the size of the specimen, and then removed from the heat. If specimens start to shrink when removed from the heat, they should be returned immediately to the hot sand and left there for a few more seconds.

The inflated specimens may then be pointed. Specimens too large to point should be killed or anaesthetized and pinned, then put on hot sand by pushing the head of the pin into the sand until the specimen rests on the sand.

Small insects are the most satisfactory for this method of inflating although larvae an inch long and spiders of greater size have been preserved in this way. These larger specimens require a longer time, but not a higher temperature. Living specimens inflate most satisfactorily but ones killed in cyanide or ethyl acetate less than an hour before treatment will inflate fairly well.

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